INDEX.

AGRICULTURE, Machinery of, at Exhibition 152
Albert, Memorial, the 80
Alais Meteorite 567
Aluminium 90, 433, 438, 572
Anæsthetics, by J. L. Phipson .. 15
Anæsthetics, Committee on..... 562
Anguillulæ, Fontana's Remarks on 214
Anodonta Cygnea, Young Fry of 134
Ansted's Channel Islands (Review) 381
Ansted, Prof., Mineralogical Department of Exhibition..... 49
Ansted, Prof., Physical Geography of Ionian Islands 458
Ants, Neuter 581
Ape Origin of Man and New Philosophy 518
Applied Chemistry 270
Aquatic Hymenopterous Insects.. 581
Aragonite, Conversion into Marble 569
Araucaria Imbricata..... 109
Arsenic, with Sulphur 122
Articles and Machines, Miscellaneous, at Exhibition 153
Ashe, Isaac, the Skin 334
Astronomy, Summary..106, 262, 419, 548
Astrophyllite..... 567
Atropine Paper..... 561
Australia, Mineral Wealth of 287
Australian Exploration 542
Aye-aye, the, at the Zoological Gardens 133

BAKER, J. G., North Yorkshire .. 526
Balloon Ascent, Mr. Glaisher's, a Short Account of 132
Barmouth, by James Samuelson.. 28
Beech Twig, Natural History of a, by Harland Coultas 365
Belfast, the, Science Class 415
Birds, Preservation of..... 449
Birmingham and Midland Institute 89
Blasting of Mines..... 573
Boiler Explosions 118
Books interesting to Readers of "Popular Science Review".... 583
Botanists, Amateur Society of.... 538
Botany and Physiology at British Association, by Dr. Collingwood 243
" Summary..109, 266, 422, 553
Brain, in Lower Animals, Posterior Lobes of..... 133
Brains of Man and Apes, Controtroversy concerning the 447
Breen, James, Mars (Plate XII.). 228
" Philosophical Instruments 70
" the Telescope..... 466
Bristow, H. W., a Glossary of Mineralogy (Review) 103
British Association at Cambridge, by Prof. Ansted..... 236
" Columbia, Botanical Expedition to..... 110
" Fungi, Plain and Easy Account of, by M. C. Cooke (Review) 258
Britteri's Quartz Crusher, Plate IV. 34
Buckman, Prof., Morphology of Periwinkle..... 491
" the Oak..... 1

CADMIUM METAL 113
Calabar Bean 553, 561
Calamine in Tipperary..... 569
Camera, the New 128
Carbolic Acid 113
Carnelian 436
Carpenter, M. B., the Microscope and its Revelations (Review)... 261
Cast-iron, Examination of..... 570
Castor..... 567
Cast Steel, Preparation of 123
Cavities in Topaz, Beryl, and Diamond..... 568
Cedar 350
Channel Islands, the, by D. T. Ansted and R. G. Latham (Review)..... 381
Chemical Products of Exhibition, by W. Crookes 58
Chemistry, Summary, 110, 268, 424, 554
Chilian Minerals 568
Cinchona in India..... 553
" Substitutes for 422
Coal-gas, Igniting Point of, Dr. Frankland on..... 132
Collingwood, C., Zoology at Exhibition 168
Colonies, the, at Exhibition, by James Samuelson 181

Colour-Blindness, by Jabez Hogg 497
Comet, by Schwabe 106
„ Halley's..... 421
„ in Constellation of Camelopardalus 106
„ the Great, of 1861, Observations on 264
Comets and Planets, New 552
Companions to Bright Stars..... 549
Conchology, British, by J. G. Jeffreys (Review) 251
Connellite 436
Cooke, M. C., Plain and Easy Account of British Fungi (Review) 258
Copper, Native 436
„ Ore, in Cheshire, Summary 439
Cork, Artificial Formation of 266
Cottage Hospitals 564
Cotton in France 528
„ Substitute for.....109, 267
Coultas, Harland, Natural History of a Beech Twig 365
„ Winter Life of Plants .. 205
Cristatella Mucedo, Plate XIII., Fig. 3 307
Crookes, W., Application of Waste 58
„ Chemical Products in Exhibition 58
Crushing and Cutting Machines at Exhibition 148
Crystallography, Summary 417
Cube, Divisions of the, by C. A. Willich 417

Damascus, Swords of 124
Daphne, the Planet, Short Account of..... 262
Darnel Grass 554
Darwin, Chas., Orchids, fertilized by Insects (Review)..... 104
Davy Lamp, Safety of 574
Deodoriser..... 563
Desulphuration of Iron..... 571
Diabetes, Researches on 279
Dialysis, Graham's Method of.... 279
Diamonds, Boring by 439
Diatoms, Cleaning..... 434
Disinfectant, New..... 563
Dodders, the, True Parasites 200
Domestic Animals, In-and-in Breeding of..... 133
Donnelly, Capt. J. F. D., Implements of War at Exhibition (with Plate VII.) 155
Dudley and Midland Geological and Scientific Society 537

Eel, the Vinegar, by Jabez Hogg 213
Eels in Corn 215
Elchies Refractor, the 419
Electric Lamp 289
Electric Lights, M. Serrin's Regulator for 129
Electricity, Summary.....128, 293
Electro-plate Manufactures, Application of Science to, by G. Gore. Part 2. Plate V. 37
English Steam Engines for French Navy 531
Entozoa, Migrations of..... 121
Epiphytes, False Parasites 201
Eta Argus 552
Exhibition, Notes on the, 49, 58, 70, 137
Eyepiece, Kelner's Orthoscopic .. 435

Fagus Sylvatica, Plate XVIII. 366
Fairbairn, W., on the Properties of Iron (Review) 99
False Moons 532
Felspar, Effects of Heat on..... 287
Fermentation produced by Infusoria 565
Fish, Walking 449
Flame Proof Fabrics..... 563
Flora of Australia..... 553
Flounders, Immense Shoals of .. 450
Flowers, Colouring Matter of, Summary 424
Food, the Preservation of, Application of Chemical Knowledge to 112
Fossil Animals 115
„ Birds, by S. J. Mackie 354
Fraunhofer-lines visible in Solar Spectrum 140
French Academy of Sciences, Prizes of..... 410
„ Microscope 566
„ Workmen on Exhibition, by G. W. Yapp..... 539
Fringes of Light during Solar Eclipses 550
Frogs *v.* Fishes..... 581
Fungi, British, by Margaret Plues 322

Galvanism a Remedial Agent.. 563
Garnet Crystals in Elba..... 122
Gases, Discovery of 21
Gasteromycetes..... 328
Geology, Summary, 114, 272, 426, 557
Geometry 417
Gerard, Jules, the African Lion in Native Haunts 311
Germs, Minuteness of 120
Glasgow, the Science Classes.... 415
Glass, an Improvement in Silvering 113
„ Specula..... 551
Globe, Population of the..... 448
Gold Medallists, List of (1862) .. 86
„ Welsh 123
Gore, G., Application of Science to Electro-plate Manufactures.. 37
Gorilla..... 297

Gorton, Mr., Observations on Titan's Shadow 135
Gosse, P. H., Rotifera, Part IV. 475
Gravity, Deviation in Direction of 551
Great Britain, Physical Geology and Geography of, by Professor A. C. Ramsay (Review)..... 510
Great Eastern, Repair of the 431
Green Pigment 407
Grinding Machines at Exhibition 148
Gum Tree, the Blue 422

Hartwig, Dr. G., the Tropical World (Review)..... 376
Heat as a Mode of Motion (Review) 522
" Summary 183, 293
Heliochromy 406
Herring Fisheries..... 580
Hogg, Jabez, Colour Blindness.. 497
" " the Vinegar Eel, Plate X..... 213
Holmesdale Natural History Club 94
Hoghton, Rev. W., Fresh-water Polyzoa, Plate XIII. 301
Huxley's, Professor, Lectures on Origin of Species 385
Hydrogen and Iron, Compound of 111
Hypobromous Acid 269
Hyrtl Collection purchased for College of Surgeons 299

In-and-in Breeding of Domestic Animals..... 133
Infusoria, Reproduction of..... 120
Insect Pest in London, New.... 581
Ionian Islands, Physical Geography of, by Professor Ansted 458
Iron Banks built by Animalculæ 299
" Properties of, by W. Fairbairn (Review)..... 99
" reduced by Peat 570
" Smelting 288
" Works, the Dowlais (Summary) 437

Jade 568
Jaw, the supposed microscopic.... 434
Jeffreys, J. G., British Conchology (Review) 251
Journal, New Botanical 424
Jungermannia, British, by M. Plues 493
Jupiter's Satellites..... 552

Kennedy, E. S., Peaks, Passes, and Glaciers (Review) 96
Kent's Hole, Researches in, by the Rev. Mr. M'Enery 91

Laburnum..... 351
Lankester, E. Ray, Tubifex Rivulorum 10
Lanthanite..... 436
Laryngoscope, the..... 560
Lathyrus tuberosus 110
Lead in Mendip Hills 289
Leifchild, J. R., Antiquity of Man 451
Lifebuoy, New 409
Light..... 128, 293, 552
Lightning Conductors, Imperfection of..... 530
Limnoria Terebrans, Borings of .. 134
Linen, Effects of Syrups on 408
Lint, Oakum a substitute for.... 280
Lion, the African, in its Native Haunts, by Jules Gerard..... 311
Lepidolite 569
Liver Diseases 559
Liverpool Field Club, the..... 94
Local Museums, Hints on Formation of (Review) 524
Locomotive Machinery at Exhibition..... 150
Lower Animals, Posterior Lobes of Brain in..... 133
Lunar Mare Lubrium 550
" Mountain Plate..... 550

M'Enery's Rev. Mr., Researches in Kent Hole..... 91
Machinery Department, the, of Exhibition, by W. Fairbairn.. 137
" of Mining 440
Mackie, S. J., Fossil Birds 354
Magenta Dye, application of to Microscopical Investigations .. 434
" on Vegetable Tissues.. 566
Mahogany..... 347
Man, Antiquity of, by J. R. Leifchild 451
" Ape-origin of 448
" Psychical Distinction of Races of..... 448
Man's Place in Nature (Review).. 518
Manchester Field Naturalists' Society 93, 537
Manganese in Smelting 570
" with Oxygen, curious Compound of..... 111
Manufactured Minerals in Exhibition..... 56
Maple..... 349
Marine Engines at Exhibition.... 142
Mars 108, 228, 421, 549
Materia Medica and Therapeutics, Summary 559
Mechanical Science 117, 275
Medicine, Summary of..... 559
Metal Cadmium applied 113
Metallurgy, Summary .. 288, 435, 570
Metamorphoses of Men and Animals (Review) 373
Meteoric Stone 287
Meteorites, Composition of..... 286

Metropolitan Club..... 538
Mica for Coating Decorations.... 122
Microscopic Meteorology..... 565
Microscope, The, and its Revelations, by W. B. Carpenter (Review) 261
Microscopy, Summary of....120, 285, 433, 565
Middle Level Drain, The 275
Midland Scientific Association .. 633
Mildew on Photographs 127
Mineralogical Department, by Prof. Ansted 49
Mineralogy, A Glossary of, by H. W. Bristow (Review)..... 103
,, Summary of, 122, 286, 435, 567
Mineral Products in Exhibition .. 52
Minerals, Manufactured 56
,, of Australia 569
Mineral Surveying and Mining Operations in Exhibition..... 51
Mining, Summary 288, 435, 573
Miscellanea..... 80, 236, 405
Mistletoe, Superstition connected with..... 202
,, The, and Parasitic Plants, Plate VIII., by Mrs. Lankester 196, 423
Moa, The 580
Mollusca, Sounds produced by.... 133
,, Thread Cells in 435
Moon, Photographs of the 420
Moth, New silk..... 450
Mountains, Lunar, on Maps 263
Mushrooms, Poisonous..... 564
Mygale, New British species at Brighton..... 134

NATIVE ZINC..... 123
Nebulæ, Disappearance of two .. 107
Nicotine, Antidote to Tetanus .. 282
Nitrate of Silver Bath, Acari in.. 121
North Yorkshire, by J. G. Baker (Review)..... 526

OAK..... 350
Oak, British, by Prof. Buckman.. 1
Oak, Fruiting of the..... 423
Oakum, a substitute for Lint 280
Objective, New One-twentieth.... 566
Ophthalmic Surgery, Summary .. 561
Orchids, Fertilized by Insects, by Charles Darwin (Review) 104
Ox, the Eye of the, by E. Beckit Truman 220
Oysters, Cultivation of..... 299
Ozone, Exhalation of by Plants.. 266

PALÆONTOLOGY 114, 272, 426, 557
Palm, the Sago 267
,, Paper, Substitute for..... 109
Parallax of Stars 551
Parasitic Plants, The Mistletoe and, by Mrs. Lankester 196
Parthenogensis of Alberia Caffra.. 564
Peaks, Passes, and Glaciers, by E. S. Kennedy (Review) 96
"Penny Lectures, The"..... 89
Periwinkle, Morphology of, by Buckman 491
Petroleum 435, 567
Pharmacopœia, New..... 562
Philosophical Instruments of Exhibition, by J. Breen 70
Phipson, T. L., Anæsthetics 15
Phosphorescence, Phenomena of examined, by Morren 111
Photographic Art, Triumph of .. 125
,, Image, Composition of 291
Photogaphs, Fading of..... 290
Photography, Summary, 290, 440, 574
Physics, Summary, 128, 293, 443, 542
Physiological Teaching in Higher Schools 135
Physiology, Comparative (Review) 373
Pigeon, Toothbilled 580
Pigment, a harmless green 113
Planets and Comets 422
Plants, Hybrid 267
,, Japanese, Acclimatization of..... 267
,, Winter Life of, Plate IX., by H. Coultas 205
Platinum..... 572
Pleiades 552
Pleurosegnia, Valves of 565
Plues Margaret, British Fungi, Plate XV..... 322
,, ,, British Jungermanniæ 493
Plumbago Crucibles 570
Pneumatic Despatch Company .. 432
Polyzoa, Fresh-water, by Rev. W. Houghton 301
Potatoe disease, The..... 268
Precious Stones, Odour of, Summary 435
Proctor, W., A Paper on Aluminium 90
Provincial Institutions and Societies..... 87
Puddling by machinery 288
Puff-ball, The edible..... 329

QUADRUPEDS, Pulsation of Heart in..... 580
Quatrefages' Metamorphoses (Review) 373
Quartz Crusher, Plate IV. 34
Quinine in India 562

RAILWAY PLANT, at Exhibition .. 150
Railway, The Metropolitan..... 431

Ramsay, Prof., Lectures to Working Men 510
Raphides in British Plants 423
Receptacles of Juices of Plants .. 563
Red Sea, Colouring Matter of.... 433
Regenerative Gas Furnace, by Siemens, explained by Prof. Faraday 122
Resuscitation from Drowing 560
Rhinoceros, Species of..... 579
River Valleys, Origin of..... 273
Rocks, Mechanical Perforation of 408
Rosewood 348
Rotherham Literary and Scientific Society 534
Rotifera, Part IV., by P. H. Gosse 475

Safety-cages in Mines 125
Samarskete..... 568
Samuelson, J., Barmouth..... 28
„ J., The Colonies, at Exhibition 181
Sandstone Blocks 116
Sarracenia Purpurea..... 554
Saturn 101, 421
Science and Art Department, Revised Regulations of the 85
„ Code, Further Changes in 417
„ Schools, Formation and Working of, by H. P. Meaden 411
„ on Continent 405, 528
Scientific Societies, Origin of 534
„ Summary 106, 262, 419
Screw Propulsion, Marine Experiments on 117
Serrin, M., Regulator for Electric Lights 129
Shells, Penetrative Power of 119
„ Preservation of Fossil 275
Shoeburyness, Experiments at .. 277
Silk-worm, Acclimatization of at Anjou 134
Silvering Glass, An Improvementin 113
Silver, Native 437
Simmonds, P. L., Waste Products (Review) 254
„ „ Woods of Commerce 345
Skin, The, by Isaac Ashe 334
Snake, New British 298
Society, Anthropological, Summary 449
Soda, Manufacture of, New Discovery in 112
Solar and Lunar Eclipses 548
„ Spots..... 109
Species, The Origin of, Professor Huxley's Lectures to Working Men (Review)..... 385
Spectra of Stars 548
Spectroscope in Steel Casting 438, 571
Sponges, Anatomy of, Dr. Bowerbank on 135
Sponges, Acclimatization of..... 450
Spontaneous Generation 120
Spots on Sun and Zodiacal Light.. 552
Stars, Parallax of 551
„ Variable 419
Statistics, Mineral, Summary 439
Steam-Engines at Exhibition 139
Steam-Sledge, The 433
Steam, Superheated 432
Steel, Application of .. 438, 528, 571
Stellar Spectra 420
Strychnia, Tannin an Antidote for 283
Stuart's Australian Exploration .. 547
Sulphur in Corfu 569
Sun-birds and Humming-birds .. 581
Sun, Motion of in Space 550
Sun, Spots on the..... 421

Tannin, An Antidote for Strychnia 283
Telegraph, Bonelli's Printing 407
Telegraphic Instrument, A New, by Siemens..... 131
Telescope, The, by James Breen 466
„ Elchies..... 263
Testing Air in Mines 573
Textile Fabrics, Machinery for Manufacture of, at Exhibition 149
Thallium 436
„ Further Information on 111
Thames, Water of..... 564
Therapeutics, Summary 282
Tin-works, Early British..... 289
Titan's Shadow, Mr. Gorton's Observations on 135
Touch, Sense of..... 339
Trees, Transplanting of large 409
Triphyline 436
Tropical World, The, by Dr. G. Hartwig (Review)..... 376
Truman, E. Beckit, The Eye of the Ox..... 220
Tubifex Rivulorum 10
Turbines, different Descriptions of 146
Tyndal's Heat as Mode of Motion (Review)..... 522

Unicorn, The 133, 297, 440

Vascular Bundles in Ferns .. 554
Vessels, Iron-clad 432
Ventilation of Mines..... 573
Vibrio Tritici, Muscular Motion of 214
Voltaic Pile, Action of, examined by Giradin 112

Wales, Gold in..... 288
War, Implements of, by Capt. J. F. D. Donnelly..... 155
Warrington Field Club 533
Warwickshire Naturalists' Field Club, The 95

Waste Products, by P. L. Simmonds (Review)..... 254
„ The Application of, by W. Crookes..... 58
Water-Pipes, Soldering of Full .. 409
„ Power, applied to Machinery 144
Welsh Gold 123
West Kent Natural History and Microscope Society 536
"Will-o'-the-Wisp" 110
Wolfram, Action of, on Cast Iron 570
Wolfram, Effects of, on Steel 288
Wood, Preservation of..... 529
Woods of Commerce, by P. L. Simmonds 345
Worm of our Rivers, the Common Red..... 10
Writing, Microscopic 121

YORKSHIRE, Botany of North.... 267
Yorkshire Philosophical Society.. 90

ZINC 123, 572
Zoology at British Association, Cambridge 243
Zoology at Exhibition, by C. Collingwood..... 168
Zoology, Summary..133, 297, 447, 579

COX AND WYMAN, PRINTERS, GREAT QUEEN STREET, LONDON.

POPULAR SCIENCE REVIEW.

CONTENTS.—No. VIII.

PAGE

THE ANTIQUITY OF MAN. By J. R. Leifchild, M.A. 451

ON THE PHYSICAL GEOGRAPHY OF THE IONIAN ISLANDS. By Professor D. T. Ansted, M.A., F.R.S. 458

THE TELESCOPE. By James Breen, F.R.A.S. 466

CONTRIBUTIONS TO THE HISTORY OF THE ROTIFERA, OR WHEEL-ANIMALCULES. Part IV.—THE FLEXIBLE CREEPERS (NOTOMMATINA); with Page Plate. By Philip Henry Gosse, F.R.S. 475

ON THE MORPHOLOGY OF VINCA MINOR (SMALL PERIWINKLE); with Page Plate. By James Buckman, F.L.S., F.G.S. 491

OUR BRITISH JUNGERMANNIÆ; with Page Plate. By Margaret Plues... 493

COLOUR-BLINDNESS; with Page Plate. By Jabez Hogg, F.L.S. ... 497

REVIEWS :—

The Physical Geology and Geography of Great Britain—The Ape-Origin of Man and the New Philosophy—Heat considered as a Mode of Motion—Hints on the Formation of Local Museums—North Yorkshire; Studies of its Botany, Geology, Climate, and Physical Geography 510

MISCELLANEA :—

Science on the Continent—Provincial Institutions and Societies—Society of Amateur Botanists—French Workmen on the London Exhibition and English Manufacturers and Workmen—Australian Exploration 528

SCIENTIFIC SUMMARY :—

Astronomy — Botany — Chemistry — Geology and Palæontology — Mechanical Science—Medicine, Surgery, Therapeutics—Microscopy—Mineralogy, Metallurgy, and Mining — Photography—Physics—Zoology 548

LIST of English and Foreign Popular Works on Scientific Subjects published during the year ending July 1, 1863 583

INDEX to Contents of Vol. II. 587

No notice can be taken of anonymous contributions. Intending contributors are respectfully requested to send their names and addresses; and, if accompanied with stamps, unsuitable manuscripts will always be carefully returned.

All communications to the Editor are to be addressed to 192, Piccadilly.

Articles in the POPULAR SCIENCE REVIEW *are Copyright, and the Right of Translation is reserved.*